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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,462	08/31/2006	Bernhard Gleich	PHUS040141US2	5782

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
595 MINER ROAD
CLEVELAND, OH 44143

EXAMINER	
FETZNER, TIFFANY A	

ART UNIT	PAPER NUMBER
2831	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,462	GLEICH, BERNHARD	
	Examiner	Art Unit	
	Tiffany A. Fetzner	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/31/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS)submitted on **8/31/2006** is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement. The initialed and dated information disclosure statement (IDS) submitted on **8/31/2006** is attached to this Office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1-19 are** rejected under **35 U.S.C. 103(a)** as being unpatentable over **Richard** EP Patent Application **EP 0737867 A1** published October 16th 1996, in view of **Barbic** US patent **7,202,667** issued April 10th 2007, filed June 3rd 2005 with an effective US priority date of **June 7th 2004**.

7. With respect to **Claim 1**, **Richard** teaches and shows "A magnetic resonance imaging scanner" [See Figure1] "comprising: a magnet generating a temporally constant magnetic field"; [See components 10,12] "one or more magnetic field gradient-generating structures" [See 32,42 etc.,] "superimposing selected magnetic field gradients on the temporally constant magnetic field;" [See col. 7 lines 20-45] "a radio frequency shield;" [See component 78] "a radio frequency coil disposed inside of the radio frequency shield and selectively producing a radio frequency field; and a magnetic field-modifying structure designed to enhance the temporally constant magnetic field," [See abstract, with respect to component 70; col. 5 lines 23-53]; "the magnetic field-modifying structure being disposed inside of the radio frequency shield and including particles of magnetic material generally smaller in at least one dimension than a skin depth of the radio frequency field in the magnetic material dispersed in an insulating binder." [See col. 6 line 8 through col. 7 line 45] Richard lacks specifically stating that the particles are smaller in one dimension than the skin depth in the epoxy matrix which functions as an insulating material, however **Barbic,** teaches the use of nanoparicles to amplify the generated magnetic field and nanoparticles which are "smaller in at least one dimension than a skin depth of the radio frequency field in the magnetic material dispersed in an insulating binder" are shown and taught in many different geometries throughout the **Barbic** reference. It would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the teaching of **Richard** with the teaching of **Barbic** in order to achieve better homogeneity because the use of nano-particles is know to amplify magnetic fields using less than 50% of the usual material with a gain of 75%. [See Barbic col. 10 line 60 through col. 11 line 5.]

8. With respect to **Claim 2**, **Richard** lacks teaching that, "the particles of magnetic material dispersed in the hinder have a fill factor of at least about 50% by volume" , but [See **Barbic** teaches this in col. 10 line 60 through col. 11 line 5.] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 2** and need not be reiterated.

9. . With respect to **Claim 3**, **Richard** lacks teaching that, the particles of magnetic material are generally smaller in at least one dimension than about one-tenth of the skin depth of the radio frequency field in the magnetic material." However, **Barbic** teaches this limitation. Because **Barbic** uses nano-size particles. [See col. 2 line 33 through col 19 line 47.]The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 3** and need not be reiterated.

10. With respect to **Claim 4**, **Richard** lacks teaching that, "the particles of magnetic material are generally smaller than about 10 microns in at least one dimension." However, **Barbic** teaches this limitation. Because **Barbic** uses nano-size particles [See col. 2 line 33 through col 19 line 47.]The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 4** and need not be reiterated.

11. With respect to **Claim 5**, **Richard** lacks teaching that "the particles of magnetic material are generally smaller than about 4 microns in at least one dimension." However, **Barbic** teaches this limitation. Because **Barbic** uses nano-size particles [See col. 2 line 33 through col 19 line 47.] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 5** and need not be reiterated.

12. With respect to **Claim 6**, **Richard** lacks teaching that "the particles of magnetic material generally do not have a direction of elongation." But the spherical particles of **Barbic** are spheres. [See figure 12, col. 14 lines 11-25.]The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 6** and need not be reiterated.

13. With respect to **Claim 7**, **Richard** teaches the ferrous wire shape. [See page 3 col. 3, lines 1-2.] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 2** and need not be reiterated.

14. With respect to **Claim 8**, **Richard** lacks teaching that "generally wire-shaped particles flare oriented with long directions generally transverse to the temporally constant magnetic field and generally parallel to a tangential direction." However, **Barbic** teaches this limitation [See col. 11 line 7 through col. 14 line 10 of Barbic.] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1, 7** also apply to **claim 8** and need not be reiterated.

15. With respect to **Claim 9**, **Richard** teaches the "particles of magnetic material are generally planar" because he teaches plates and strips of ferrous particles. [See col. 6 lines 23-35]. The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 2** and need not be reiterated.

16. With respect to **Claim 10**, **Richard** lacks teaching that "the generally planar particles are oriented with plane normals generally parallel to the temporally constant magnetic field." However, **Barbic** teaches this limitation. [See col. 7 line 18 through col. 11 line 50] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claims 1, 9** also apply to **claim 10** and need not be reiterated.

17. With respect to **Claim 11**, **Richard** shows the radio frequency coil includes a plurality of parallel rungs, and the particles of magnetic material are disposed at least partially between the rungs." [See figures 2, 7, 9] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 2** and need not be reiterated.

18. With respect to **Claim 12**, **Richard** lacks showing that "the magnetic field-modifying structure includes: a plurality of generally annular structures containing particles of magnetic material, the generally annular structures being oriented genera transverse to the temporally constant magnetic field, the annular structures having annular cross-sections elongated transverse to the temporally constant magnetic field." However, **Barbic** teaches this limitation. [See figure 4]. The same reasons for rejection,

obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 12** and need not be reiterated.

19. With respect to **Claim 13**, **Richard** lacks showing "the magnetic field-modifying structure includes: a plurality of magnetic generally annular structures containing the particles of magnetic material in the insulating binder, the magnetic generally annular structures being oriented generally transverse to the temporally constant magnetic field, the magnetic annular structures having a longitudinal demagnetization factor parallel to the temporally constant magnetic field and a tangential demagnetization factor in a tangential direction transverse to the temporally constant magnetic field, the longitudinal demagnetization factor being larger than the tangential demagnetization factor to produce tangential flux guiding. However, **Barbic** shows this limitation [See figures 2, and 4] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 13** and need not be reiterated.

20. With respect to **Claim 14**, **Richard** lacks teaching "wherein the magnetic field-modifying structure has a longitudinal demagnetization factor parallel to the temporally constant magnetic field and a tangential demagnetization factor in a tangential direction transverse to the temporally constant magnetic field, the longitudinal demagnetization factor being larger than the tangential demagnetization factor to produce tangential flux guiding." However, **Barbic** shows this limitation [See figure 3] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1** also apply to **claim 14** and need not be reiterated.

21. With respect to **Claims 15 through 19, these are just** synonymous claims, of what has already been addressed, in previous, but substituting synonymous phraseology Since and all of the limitations can be found from the combinational art of **Richard in view of Barbic,** in the same citations already set forth, the examiner will not reiterate again.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday, Wednesday, and Friday-

Thursday from 7:00am to 2:10 pm., and on Tuesday and Thursday from 7:00am to 5:30pm.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Diego Gutierrez,** can be reached at (571) 272-2245. The **only official fax phone number** for the organization where this application or proceeding is assigned is **(571) 273-8300**.

24. Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Diego Gutierrez/
Supervisory Patent Examiner, Art Unit 2831

/TAF/
June 28, 2008